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EXAMINER	
COFFY, EMMANUEL	
ART UNIT	**PAPER NUMBER**
2157	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/967,124	BATKE ET AL.	
	Examiner	Art Unit	
	Emmanuel Coffy	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *September 28, 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☒ Claim(s) *10-14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the application filed on October 2nd, 2001. Claims 1-20 are pending. Claims 1-20 are directed to a system and method for a "Web-accessible Embedded Programming Software."

Priority

2. Request for the benefit of provisional application 60/289,853 is hereby acknowledged; said benefit is granted.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Embedded Web-accessible industrial control system." See MPEP §606.01.

Claim Objections

4. Claims 10, 11, 12, 13 and 14 are objected to because of the following minor informalities. Claim 10 is a dependent claim, which claims dependency on 1 whereas claim 9 a dependent claim owes its dependency to claim 6.

A claim that depends from a dependent claim should not be separated by any claim that does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general applicant's sequence will not be changed. See MPEP §608.01(n). The objection to claim 10 is subsequently applied to 11-14. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 16 is rejected under 35 U.S.C. §112 ¶2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the claimed invention. A reasonable artisan skilled in the art could not comprehend the claims as written. The claim recites: "a memory means for storing programming software **capable of**...." It is not clear whether the programming software is capable of performing the task or is-it actually doing the function. Hence, the scope of the claim is unascertainable.

However, in order to expedite a more complete examination the Examiner asserts that this invention is understood as: "a memory means for storing programming software being utilized...."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-5, 10,15-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Papadopoulos et al. (US 6,061,603) in view of Lindner et al. (US 6,640,140.)

Papadopoulos teaches the invention substantially as claimed including a control system which allows a user to access a programmable Logic Controller (PLC) system over a communication network such as an Internet network using a web browser. The system includes an Internet web interface between the network and the programmable Logic Controller. (See abstract).

As to claim 1, Papadopoulos teaches an industrial control system for controlling an industrial process comprising: (See Fig. 2)

a plurality of I/O devices capable of exchanging signals with the industrial process; (See Fig. 2 (40))

a web access module including a web server coupled to a PLC, wherein the web server is capable of being coupled to at least one remote device via the Internet, and (See Fig. 2 (4, 30, 32, 34, 40); Fig. 3)

wherein the PLC is coupled to the I/O devices; wherein the web access module further includes programming software that can be utilized to generate a controller program for at least one of the PLC and one of the I/O devices, and (See col. 4, lines 37-39. - Papadopoulos teaches remote commands processing including data flow control.)

wherein the web server is capable of providing the programming software onto the Internet for transmission to the remote device, so that the remote device is able to generate the controller program. (See col. 4, 34-39. - Papadopoulos teaches remote commands processing including data flow control.)

Papadopoulos does not explicitly teach providing the software over the Internet. However, Lindner expressly discloses web pages containing ladder scan functionality. (See col. 4, lines 25-30, 42-44, 53-59.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with programming software remotely provided through the Internet as taught by Lindner, because this would eliminate the need for an attendant to be present for software changes thereby providing for a cost efficient, fast and flexible system by remotely installing software changes.

Claim 2:

As to claim 2, Papadopoulos teaches the industrial control system of claim 1, wherein the PLC and the web server are one of: (a) implemented in a single computer executing two programs; and

(b) implemented respectively in two different computers that are in communication via a communication link. (See Fig. 2)

Papadopoulos fails to teach the implementation of the system in a single computer executing two programs. However, Lindner expressly discloses such implementation. (See abstract and Fig. 1.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with the implementation taught by Lindner, because this system would be more robust

with one computer executing two programs since it would at the very least eliminate timing or synchronization issues.

Claim 3:

As to claim 3, Papadopoulos teaches the industrial control system of claim 1, wherein the PLC executes the controller program, once the remote device has generated the controller program using the programming software and the controller program has been returned to the web access module from the remote device.

Papadopoulos fails to teach executing the controller program, once the remote device has generated the controller program. However, Lindner expressly discloses such limitation. (See col. 4, line 35 – col. 5, line 6.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with the remote programming taught by Lindner, because this system would eliminate the need for an attendant to be present to run the actual software.

Claim 4:

As to claim 4, Papadopoulos teaches the industrial control system of claim 1, wherein the programming software is stored within at least one of the PLC, the web server, a memory device within the web access module, a memory device within at least one of the I/O devices and a remote memory device.

Papadopoulos fails to explicitly teach the limitation of claim 4. However, Lindner expressly discloses such limitation. (See Fig.1)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with storing the programming software in the PLC as taught by Lindner, because this system would eliminate the need for an attendant to be present to run the actual software.

Claim 5:

As to claim 5, Papadopoulos teaches the industrial control system of claim 4, wherein an existing controller program is stored within at least one of the PLC, the web server, a memory device within the web access module, a memory device within at least one of the I/O devices and a remote memory device.

Papadopoulos fails to explicitly teach the limitation of claim 5. However, Lindner expressly discloses such limitation. (See Fig.1)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with storing the programming software in the PLC as taught by Lindner, because this system would eliminate the need for an attendant to be present to run the actual software.

Claim 10:

As to claim 10, Papadopoulos teaches the industrial control system of claim 1, wherein the web server is coupled to the Internet by way of an Internet interface, and (See Fig. 1)

wherein the PLC is coupled to the I/O devices by way of a control network interface. Papadopoulos fails to explicitly teach the PLC coupled to the I/O devices by way of a control network interface. However, Lindner expressly discloses such limitation. (See Fig.1. 30a, 22b)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with the PLC coupled to the I/O devices by way of a control network interface as taught by Lindner, because this system would be more flexible.

Claim 14:

As to claim 14, Papadopoulos teaches the industrial control system of claim 13, wherein the signal must be received only when the programming software to be sent is a new version of the programming software that has not earlier been communicated to the remote device.

Papadopoulos fails to explicitly teach the software replacement limitation. However, Lindner expressly discloses such limitation. (See col. 4, lines 25-30.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with the PLC coupled to the I/O devices by way of a control network interface as taught by Lindner, because this system would be more flexible.

Claim 15:

As to claim 15, Papadopoulos teaches in an industrial control system having a plurality of control devices that operate to monitor and control an industrial process, a

web access module coupled to the plurality of control devices, the web access module comprising:

a memory means for storing programming software capable of being utilized to generate a controller program for operation on at least one of the web access module and one of the control devices; and (See Fig. 2. (36))

a processor means coupled to the memory means, the processor means for sending the programming software to a remote device and receiving communications concerning the controller program from the remote device, wherein the controller program is generated at the remote device through the use of the programming software, (See Fig. 2.)

wherein the web access module is further adapted to allow for communications between the processor means and the remote device by way of the Internet. (See col. 4, lines 31-36.)

Papadopoulos does not explicitly teach providing the software over the Internet. However, Lindner expressly discloses web pages containing ladder scan functionality. (See col. 4, lines 25-30, 42-44, 53-59.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with programming software remotely provided through the Internet as taught by Lindner, because this system would eliminate the need for an attendant to be present for software changes.

Claim 16:

As to claim 16, Papadopoulos teaches the web access module of claim 15, wherein the processor means includes a web server and a PLC, and wherein an existing controller program is stored by the memory means in association with a particular version of the programming software. (See Fig. 2, Fig. 3, col. 4, lines 40-45, and col.12, lines 30-34.)

Papadopoulos fails to explicitly teach the limitation of remote programming software. However, Lindner expressly discloses web pages containing ladder scan functionality. (See col. 4, lines 25-30, 42-44, 53-59.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with programming software remotely provided through the Internet as taught by Lindner, because this system would eliminate the need for an attendant to be present for software changes.

Claim 17:

As to claim 17, Papadopoulos teaches the web access module of claim 16, wherein the control devices are selected from the group consisting of I/O modules, motor controllers, and PLCs. (See Fig. 2 (32) and (40).)

Papadopoulos does not explicitly disclose motor controllers. However, Lindner expressly discloses sensor or actuator (motor controllers). (See Fig.1.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the disclosure of Papadopoulos as articulated above

with the motor controllers as disclosed by Lindner, because this system would provide for the remote control of motors.

Claim 18:

As to claim 18, Papadopoulos teaches a method of generating a controller program for at least one control device of an industrial control system that monitors and controls an industrial process, the method comprising:

providing a web server within the industrial control system, wherein the web server is capable of communicating with at least one remote device via the Internet; (See col. 4, lines 25-39.)

obtaining programming software capable of being used to generate the controller program;

providing the programming software onto the Internet for transmission to the at least one remote device; and

receiving from the at least one remote device the generated controller program. (See col. 4, lines 40-45.)

Papadopoulos fails to explicitly teach the limitation of remote programming software. However, Lindner expressly discloses web pages containing ladder scan functionality. (See col. 4, lines 25-30, 42-44, 53-59.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with programming software remotely provided through the Internet as taught by Lindner,

because this system would eliminate the need for an attendant to be present for software changes.

Claim 19:

As to claim 19, Papadopoulos teaches the method of claim 18, further comprising:

obtaining an existing controller program from a memory device on which the existing controller program is stored, the programming software being associated with the existing controller program; (Fig. 2, col. 4, lines 40-45.)

providing the existing controller program onto the Internet for transmission to the at least one remote device; and

after receiving the generated controller program from the at least one remote device, storing the generated controller program on the memory device in association with a version of the programming software (See col. 12, lines 30-33 – configuration) that was utilized to generate that controller program. (See col. 4, line 45 – receiving response from the remote device.)

Papadopoulos fails to explicitly teach the limitation of remote programming software. However, Lindner expressly discloses web pages containing ladder scan functionality. (See col. 4, lines 25-30, 42-44, 53-59.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with programming software remotely provided through the Internet as taught by Lindner,

because this system would eliminate the need for an attendant to be present for software changes.

Claim 20:

As to claim 20, Papadopoulos teaches the method of claim 19, wherein the web server and a PLC are included within a web access module, wherein the PLC is coupled to a plurality of additional control devices within the industrial control system, and wherein the controller program is utilized by at least one of the PLC and one of the additional control devices.

Papadopoulos does not disclose a web server and a PLC are included within a web access module and the other limitations recited by above claim. However, Lindner expressly discloses such configuration. (See Fig. 1 and Fig. 2.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos with the configuration disclosed by Lindner, because this system would be more compact.

7. Claims 6-9, 11-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Papadopoulos et al. (US 6,061,603) in view of Lindner et al. (US 6,640,140.) and in further view of Hauet (US 6,799,077.)

Papadopoulos teaches the invention substantially as claimed including a control system which allows a user to access a programmable Logic Controller (PLC) system over a communication network such as an Internet network using a web browser. (See abstract).

Claim 6:

As to claim 6, Papadopoulos teaches the industrial control system of claim 5, wherein the web server is capable of sending the existing controller program along with the programming software to the remote device by way of the Internet, so that the remote device is able to modify the existing controller program to generate the controller program.

Neither Papadopoulos nor Lindner teaches a remote device being able to modify a program. However, Hauet teaches program modifications implemented by a user. (See col. 4, lines 14-20 and col. 3, lines 49-51.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above and remotely storing information as taught by Lindner with this notion of user modification as disclosed by Hauet, because this system would allow a user to modify software remotely with minimal human interaction.

Claim 7:

As to claim 7, Papadopoulos teaches the industrial control system of claim 6, wherein it is allowable for the remote device to remotely store a backup copy of the controller program generated based upon the existing controller program.

Neither Papadopoulos nor Lindner teaches a remote device storing information. However, Hauet teaches remote storage information. (See col. 4, lines 8-13 and col. 8, lines 20-25.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above and remotely storing information as taught by Lindner with this notion of remote information storage as disclosed by Hauet, because this system would allow a user to store software remotely with minimal human interaction.

Claim 8:

As to claim 8, Papadopoulos teaches the industrial control system of claim 6, wherein the programming software includes a plurality of versions, (See col. 12, lines 31-33 – configuration refers to version) and wherein the existing controller program and a plurality of additional existing controller programs are stored in association with the respective versions of the programming software that were employed to generate the respective existing controller programs.

Papadopoulos fails to explicitly teach the limitation of remote programming software. However, Lindner expressly discloses web pages containing ladder scan functionality. (See col. 4, lines 25-30, 42-44, 53-59.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with programming software remotely provided through the Internet as taught by Lindner, because this system would eliminate the need for an attendant to be present for software changes.

Neither Papadopoulos nor Lindner teaches a remote storage of information. However, Hauet teaches remote storage information. (See col. 4, lines 8-13 and col. 8, lines 20-25.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above and remotely storing information as taught by Lindner with this notion of remote information storage as disclosed by Hauet, because this system would allow a user to store software remotely with minimal human interaction.

Claim 9:

As to claim 9, Papadopoulos teaches the industrial control system of claim 6, wherein the programming software that is sent along with the existing controller program is of a version (See col. 12, lines 31-33 – configuration refers to version) that was used to generate the existing controller program.

Neither Papadopoulos nor Hauet teaches the limitation of remote programming software. However, Lindner expressly discloses web pages containing ladder scan functionality. (See col. 4, lines 25-30, 42-44, 53-59.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with programming software remotely provided through the Internet as taught by Lindner, because this system would eliminate the need for an attendant to be present for software changes.

Claim 11:

As to claim 11, Papadopoulos teaches the industrial control system of claim 1, wherein the web server provides the programming software to the remote device in response to a request received from the remote device. (See col. 4, lines 44-45 – receiving response from the remote device)

Neither Papadopoulos nor Hauet teaches the limitation of remote programming software. However, Lindner expressly discloses web pages containing ladder scan functionality. (See col. 4, lines 25-30, 42-44, 53-59.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with programming software remotely provided through the Internet as taught by Lindner, because this system would eliminate the need for an attendant to be present for software changes.

Claim 12:

As to claim 12, Papadopoulos teaches the industrial control system of claim 1, wherein the web server provides onto the Internet, in response to a request received from the remote device, (See col. 4, lines 44-45 – receiving response from the remote device)

information indicative of another Internet-accessible location at which the remote device can obtain desired programming software.

Papadopoulos does not teach the limitation of information indicative of another Internet-accessible location at which the remote device can obtain desired programming

software. However, Lindner expressly discloses such limitation. (See col. 4, lines 53-59; See also '077 col. 4, lines 31-36.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above with alternate Internet-accessible location as taught by Lindner or Hauet, because this system would provide redundancy in getting software upgrades.

8. Claim 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over Papadopoulos et al. (US 6,061,603) in view of Lindner et al. (US 6,640,140.) and in further view of Chan et al. (US 6,588,673.)

Papadopoulos teaches the invention substantially as claimed including a control system which allows a user to access a programmable Logic Controller (PLC) system over a communication network such as an Internet network using a web browser. The system includes an Internet web interface between the network and the programmable Logic Controller. (See abstract).

As to claim 13, Papadopoulos teaches the industrial control system of claim 1 wherein, prior to the sending of the programming software to the remote device, the web access interface must receive a signal indicative of at least one of a payment agreement and a credit card number from the remote device.

Neither Papadopoulos nor Lindner teaches this notion of payment agreement and credit card number. However, Chan teaches this notion of agreement and credit card number. (See col. 9, lines 51-65.)

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the teachings of Papadopoulos as articulated above and remotely storing information as taught by Lindner with this notion of receiving an agreement and credit card number as disclosed by Chan, because this system would allow a user to purchase software upgrades with minimal human interaction.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Coffy whose telephone number is (571) 272-3997. The examiner can normally be reached on 8:30 - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Coffy, Esq.
Patent Examiner
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EC Jan 10, 2005

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